WHAT IS CLAIMED IS:

1. A power switching circuit comprising:

a power semiconductor switching device;

a charge pump circuit having a control input to control whether the charge pump is on or off and a charge pump output, the charge pump output being coupled to a control terminal of the power semiconductor switching device;

a bootstrap power supply for supplying power to driver circuitry for the power semiconductor switching device, the bootstrap power supply comprising a bootstrap capacitor coupled to a charging current source;

the bootstrap power supply providing power to the driver circuitry when the power semiconductor switching device is being switched by the driver circuitry in a pulsed mode; and

the charge pump supplying a control voltage to turn on the power semiconductor switching device and maintain it on when the power switching device is to be maintained on continuously.

2. The power switching circuit of claim 1, wherein the bootstrap capacitor is coupled to the charging current source by a first diode.

3. The power switching circuit of claim 2, wherein the bootstrap capacitor is coupled to the driver circuitry by a second diode.

4. The power switching circuit of claim 2, wherein the bootstrap capacitor is coupled in series with a charging resistor.

5. The power switching circuit of claim 1, wherein the bootstrap capacitor charges from the charging current source through a load coupled to the power switching device.

6. The power switching circuit of claim 1, wherein the power switching device is a high side switching device coupling the load to a voltage source.

7. The power switching circuit of claim 1, wherein the power switching device comprises a MOSFET.

8. The power switching circuit of claim 3, wherein the second diode prevents the charge pump from charging the bootstrap capacitor.

9. A method for switching a power semiconductor, comprising:

generating a voltage from a charge pump circuit having a control input to control whether the charge pump circuit is on or off and selective providing the voltage to a control terminal of the power semiconductor;

charging a bootstrap capacitor of a bootstrap power supply when the power semiconductor is being switched by the drive circuitry in a pulsed mode;

providing power to the driver circuitry from the bootstrap power supply when the power semiconductor is being switched by the driver circuitry in the pulsed mode; and

supplying a control voltage from the charge pump circuit to turn on the power semiconductor and maintain it on when the power semiconductor is to be maintained continuously.

10. The method of claim 1, further comprising preventing charging of said bootstrap capacitor by said charge pump circuit.